## Claims

1. A magnetic recording medium comprising (a) a magnetic layer comprising grains and (b) an underlayer comprising an underlayer material having a hexagonal-closed-packed (hcp) or face-centered-cubic (fcc) lattice structure with a <0002> or <111> growth orientation, wherein at least two-thirds or more of the grains of said magnetic layer have a derivative structure of fcc that is not a fcc lattice structure, the derivative structure having a c-axis that is at an angle, canted out-of-plane of the magnetic layer.

2. The magnetic recording medium of claim 1, wherein the underlayer has substantially no material having a $L_{10}$ lattice structure and the magnetic layer precursor material is an alloy having a <111> growth orientation and is selected from the group consisting of substantially equiatomic CoPt, FePt, CoPd and FePd, and mixtures thereof.

3. The magnetic recording medium of claim 1, wherein the magnetic layer precursor is annealed to form the magnetic layer comprising fct $L_{10}$ lattice structure.

4. The magnetic recording medium of claim 1, wherein the derivative structure is a face-centered tetragonal (fct) $L_{10}$ and the c-axis is canted about 35° out-of- plane of the magnetic layer.

5. The magnetic recording medium of claim 3, wherein the c-axis is canted about 35° out-of-plane of the magnetic layer.

6. The magnetic recording medium of claim 1, wherein the lattice structure of the close-packed planes of the underlayer material substantially matches the {111} planes of the fct $L_{10}$ lattice structure of the grains of the magnetic layer.

7. The magnetic recording medium of claim 6, wherein a mismatch between the lattice structure of the underlayer material and that of the fct $L_{10}$ lattice structure of the magnetic layer is less than 10%.

8. The magnetic recording medium of claim 1, wherein the underlayer is directly in contact with the magnetic layer.

9. The magnetic recording medium of claim 1, wherein the underlayer material is one of a Ru alloy, a Ag alloy, a Pt alloy, and a Pd alloy.

10. The magnetic recording medium of claim 9, wherein the underlayer is on an amorphous TiCr alloy.

11. A method of manufacturing a magnetic recording medium comprising (a) depositing an underlayer comprising an underlayer material having a hcp or fcc lattice structure with a <0002> or <111> growth orientation on a substrate and (b) subsequently depositing a magnetic layer comprising grains on the substrate, wherein at least two-thirds or more of the grains have a fct $L_{10}$ lattice structure having a c-axis that is at an angle, canted out-of-plane of the magnetic layer.

12. The method of claim 11, wherein the underlayer has substantially no material having a $L_{10}$ lattice structure and the magnetic layer is annealed to form the fct $L_{10}$ lattice structure.

13. The method of claim 11, wherein the c-axis is canted about 35° out-of-plane of the magnetic layer.

14. The method of claim 12, wherein the c-axis is canted about 35° out-of-plane out-of- plane of the magnetic layer.

15. The method of claim 11, wherein the lattice structure of the underlayer material substantially matches the fct $L_{10}$ lattice structure of the magnetic layer.

16. The method of claim 15, wherein a mismatch between the lattice structure of the underlayer material and that of the fct $L_{10}$ lattice structure of the magnetic layer is less than 10%.

17. The method of claim 11, wherein the underlayer is directly in contact with the magnetic layer.

18. The method of claim 12, wherein the magnetic material is an alloy having a <111> growth orientation and is selected the group consisting of substantially equiatomic CoPt, FePt, CoPd and FePd, and mixtures thereof.

19. The method of claim 11, wherein the underlayer material is one of a Ru alloy, a Ag alloy, a Pt alloy, and a Pd alloy.

20. The method of claim 19, wherein the underlayer is on an amorphous TiCr alloy.

21. A magnetic recording medium, comprising a substrate and means for producing an easy magnetization axis tilted away from a plane of the substrate.